



USAID
FROM THE AMERICAN PEOPLE



JAMAICA

READYBOARD ELECTRIFICATION DEMONSTRATION (RED) PROJECT

From July 2015 to July 2018, SRUC undertook a pilot program to help Jamaica's electric utility provide legal access to the grid in a poor community in downtown Kingston with a number of dwellings that could not be safely wired for electricity. SRUC worked with the utility to carry out training and develop materials outlining the financial and customer benefits of regularizing residential areas that were typically areas of high electricity losses.

WORK ASSIGNMENT SUMMARY

From July 2015 to July 2018, SRUC undertook a pilot program, the Readyboard Electrification Demonstration (RED) Project, to illustrate how to regularize low-income urban areas as well as how to build a multi-faceted community engagement approach to those types of communities. Under this Work Assignment, SRUC sponsored procurements for wiring materials and technical trainings to improve employee's understanding of community engagement as well as to facilitate legal connections to the grid that would help to reduce losses, improve revenue collection, and assuage community tensions in Majesty Gardens, a low-income neighborhood in Kingston, Jamaica. This demonstration project was part of series of engagements under the SRUC TO in Jamaica with the utility company and the regulator

to help with high levels of aggregate technical and commercial losses (AT&C), which have impeded utility operations, customer relations, and electricity quality.

CHALLENGE

The Jamaica Public Service Company Ltd (JPS), the private power utility and the sole provider of electricity on the island, suffers from high levels AT&C losses. In 2015, these losses were estimated at 26.98%, which is made up of technical losses in the order of 8.60% (average for utilities of similar size), and non-technical losses in the order of 18.38%, which is primarily due to power theft.¹ Furthermore, the utility company has had a longstanding antithetical relationship with its regulator, the Office of Utilities Regulation (OUR), as it relates to how those electricity losses are calculated and how they are included in the tariff. The losses result in a significant revenue impact to the utility, impeding the ability of the utility to maintain and invest in its distribution and transmission infrastructure, among other capital projects. There was also a lack of understanding with the utility company on how to work with low-income communities. For example, in 2014, there were several instances of intentionally suspended power/forced black outs by JPS in communities that had a high level of theft and primarily low-income residents, which resulted in immediate corrective action from OUR.



A readyboard customized to the Jamaican electrical and safety standards by JPS engineers.

APPROACH

- Identified a low-income community in Kingston where the majority of households were unable to legally connect to the grid due to the condition of the houses, so the only option was illegal throw-ups for electricity service.
- Worked with JPS, the Government Electrical Inspectorate (GEI), OUR, and the technical engineering college to customize a way through which those households could be legally and safely provided electrical service with a “readyboard” (Figure 1); then worked with JPS to customize the readyboard specifications to the Jamaican electrical standards and community needs.
- Identified eligible residents in the community through a pre-pilot survey, then procured electrical and hardware materials for 420 readyboards; partnered with technical engineering college to assemble the readyboards according to the specifications adapted by JPS and GEI; contracted individuals to install the readyboards in the community with pre-paid meters; helped JPS create new accounts for these customers; and then tracked electricity consumption and credit purchases.

¹ Jamaica Public Service Co. Ltd, “Annual Tariff Adjustment Submission for 2016,” 3 May 2016. Pg 41. https://www.our.org.jm/ourweb/sites/default/files/documents/sector_documents/jps_annual_tariff_adjustment_filing_2016_-_2016_may_4_final_2_-_uploaded_2016_may_19.pdf

- Worked with OUR to create a more affordable “community renewal” tariff rate that applies to pre-paid customers. Residents qualified for the lower tariff rate if they were enrolled in the national government assistance program, and this community renewal tariff allows them to pay a lower cost per kWh for electricity up to 150 kWh per billing cycle.
- Planned and undertook a post-pilot survey to understand the impact on recipients’ quality of life, attitudes, sense of security, and financial position through HOPE Caribbean, a local Jamaican survey company that had also undertaken the pre-project survey.
- Created a dedicated community engagement training, including a knowledge exchange workshop with the individual in charge of community engagement and energy efficiency initiatives at Rio LIGHT, a Brazilian distribution company that had engaged in several successful community engagement projects that resulted in lower non-technical losses.
- Developed a community engagement manual for JPS staff and provided technical assistance on successful community engagement strategies and approaches from utilities around the world, including tangible feedback on the positive impact to the utility bottom line and return on its investment.

KEY RESULTS

- Installation of 420 readyboards in the community, leading to new, legal pre-paid customers with access to safe, reliable electricity.
- An improved and more nuanced approach JPS to low-income communities and a better understanding of the value of community engagement strategies and approaches.
- Adjusting for seasonality in electricity purchases (Oct – Dec average from 2017 to 2018) the community exhibited drastic decreases in the energy delivered as well as the losses due to theft; losses dropped by 43 MWh/month – a reduction in losses from the community of nearly 77%. During the same period, purchases also increased 2-3x contributing further to the portion of energy delivered no longer attributed to theft.
- Overall loss rate remains at around 40-50% in the community, but the impact of both increased purchases and overall reduced energy to the community has dramatically reduced the energy lost from JPS’ system.
- Based on payment patterns since the installation of readyboards in the community, SRUC estimates a full return on the investment for JPS in 12 years, accounting for USAID assistance on the material procurement. In the future, should JPS undertake a similar project without any USAID assistance on materials or wiring, SRUC estimates a full return on its investment in 15 years.
- Opening of several new vendors that sell pre-paid electricity credit in the community.
- Achieved and increase in billed sales for over two years. Previously, JPS collected \$0 from the community, however, sales from Jan – Dec 2018 increased to \$146,401.32 Jamaican (\$1,000 USD).
- The RED pilot was the largest number of new connections in a community under JPS’s Community Renewal Program efforts.
- Reported improvement in quality of life and improved sense of security from the residents of Majesty Gardens.



A JPS community representative helping sign up community members for the readyboard pilot and explaining where to buy

- Improved ability for the residents in Majesty Gardens to access financial, social, and other public and private services with official paperwork from the utility that identifies them as a resident.

M&E INDICATORS

- Number of beneficiaries with improved energy services due to USG assistance - **1,114 people** from 400 readyboards installed in the Majesty Gardens community. (Standard Indicator: EG.7.1-1)
- Greenhouse gas (GHG) emissions, estimated in metric tons of CO₂e, reduced, sequestered, or avoided through clean energy as supported by USG assistance - **248.53 tCO₂e** from regularizing new households, utilizing the [USAID Clean Energy Emission Reduction \(CLEER\)](#) tool, which estimates GHG emissions reductions from USAID interventions based on different types of projects. (Standard Indicator: EG.12-6)
- Amount of investment mobilized (in USD) for energy projects as supported by USG assistance - **\$89,643 USD** derived from the investment from JPS in Jamaica for the readyboard project. These investments costs are split with the local USAID/Jamaica Mission. (Standard Indicator: EG.7.2-1)
- Number of people trained in technical energy fields supported by USG assistance – **41 people** total from the following trainings (EG.7.3-2).
 - 26 people (8 male/18 Female) from a series of safety trainings in the community and community representatives related to readyboard usage)
 - 15 people (5 male/10Female) from a three-day workshop with JPS and leader at RIO Light on community engagement and energy efficiency in low-income communities
- Number of original publications on SRUC released to public (Custom Indicator) - **3 Publications** on the Readyboards- Energy Efficiency Tips, Readyboard Quick Info Memo, Readyboard FAQs. (Custom Indicator)

PARTNER MISSIONS

SRUC worked with closely with the USAID Jamaica to implement the RED project, which contributed a \$189 million buy-in to the SRUC Task Order for the materials for the readyboard assembly. Throughout the implementation of the pilot, SRUC partnered with the bilateral program, USAID Jamaica Caribbean Clean Energy Program (CARCEP), to coordinate on work with JPS and to help it meet its loss reduction targets, community engagement goals, and capacity building needs.

FOLLOW-ON WORK

During the implementation of the pilot, there was interest from other JPS regional offices (i.e. parishes) to use the readyboard to connect customers in communities with sub-standard housing; in particular, the parish in St. Catherine has introduced the readyboard as an energy solution for everyone. One of the main painpoints identified through the survey was the ability to pay for electricity credits, despite the lower lifeline tariff negotiated through the regulator, due to the low paying jobs and irregularity in income. As such, SRUC worked to tailor the [Empower Entrepreneur Training Program \(EETP\)](#) for the Majesty Gardens community to improve entrepreneurial skills, increase incomes, and further improve quality of life. The EETP became the next SRUC Work Assignment in Jamaica.